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10/701,456

11/06/2003

Steven Walak

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08/21/2006

KENYON & KENYON LLP  
1500 K STREET N.W.  
SUITE 700  
WASHINGTON, DC 20005

EXAMINER

VORTMAN, ANATOLY

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/701,456

Applicant(s)

WALAK, STEVEN

Examiner

Anatoly Vortman

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006 (RCE and Amendment).
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-50 is/are pending in the application.
- 4a) Of the above claim(s) 21-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application on June 22, 2006, after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed concurrently with the RCE has been entered.

### ***Election/Restrictions***

2. Claims 21-35 are withdrawn from further consideration as being directed to a non-elected invention, for the same reasons as presented in section #2 of the final Office action of March 29, 2006. Applicant's amendments to preambles of independent claims 21, 27, and 33 do not change the scope of the claims and, therefore, do not obviate the outstanding restriction requirement.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 36-50, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 36, as amended, recites: "wherein  $A_f$  and  $M_f$  allow actuation of the two-way actuator at temperatures suitable for use on a subject's body tissue". This clause produce indefiniteness, since it is not clear what is encompassed by terms "suitable", "use" and "body tissue", i.e. "suitable" in what respect? What kind of use? Further, what kind of "body tissue"? The tissue that is a part of a living organism or the tissue that has been removed from the living organism, frozen tissue, heated tissue, etc. Further, claim 38 recites: "approximately body temperature". What body temperature is referred to? The normal body temperature of the live subject, the temperature of the refrigerated dead body, etc.? And how close is "approximately"?

***Claim Rejections - 35 USC § 102/103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 36-50, are rejected under 35 U.S.C. 102(b) as being anticipated by or in alternative as obvious over WO 97/04895 to Zadno-Azizi et al (cited on IDS) (US counterpart US/5611874).

Regarding claims 36 and 40-50, as best understood, the disclosure of Zadno-Azizi et al. teaches all of the elements recited in the claims, and specifically, as shown on Fig. 2 and 3: a two-way actuator formed of composite material, wherein the composite material comprises: a first component comprising a first shape memory alloy (27); and a second component comprising an elastic metal (28), wherein said first component and said second component are metallurgically bonded together to form said composite material comprising a body having a surface and a cladding covering at least part of the body and being in intimate contact with the surface, with body and cladding being formed of different materials and at least one of the materials being a shape memory alloy e.g. Nickel Titanium (nitinol) SMA (claim 1 and page 4 line 17 to page 6, line 15). It is also disclosed a method for forming this composite structure, according to which body and cladding by drawing down the assembly to a reduced cross sectional area and establishing intimate contact between body and cladding. In an example of forming a composite wire the center core is a SMA and the cladding may be stainless steel, or a highly conductive material such as copper, gold, silver, nickel, etc. The drawing operation creates strong metallurgical adhesion between the SMA core and the cladding and provides a very strong composite material (claims 19-22 and page 7, line 3 to page 9, line 16). A composite structure is additionally described (page 15, line 1 to page 17, line 6) which consists of two planar sheets one of them being a SMA which is cladded for example with stainless steel. Wherein transitional temperatures of the first shape memory alloy allow actuation of the two-way actuator at temperatures suitable for use on a subject's body tissue (inherently, if said body tissue is, for example, removed from the live organism).

Regarding claims 37-39, and alternatively, regarding claims 36 and 40-50, it would have been obvious to select the transitional temperatures of the first shape memory alloy in any suitable range, including as claimed (i.e.:  $A_f < 100^\circ\text{C}$ ,  $M_f > 0^\circ\text{C}$ , or  $M_f$  greater than approximately body temperature (?)), in order to accommodate the actuator for a specific application, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 43-50, Zadno-Azizi et al additionally teaches (Fig. 4 and 9-12) various shapes and forms of the actuator as recited in the claims, including multilayered sheet and rod structures.

### ***Response to Arguments***

7. Applicant's arguments have been fully considered but they are not persuasive.

Regarding the restriction requirement, the requirement still stands. Applicant's amendments to preambles of independent claims 21, 27, and 33 do not change the scope of the claims and, therefore, do not obviate the outstanding restriction requirement.

The remaining arguments are moot, because claims as amended still read on Zadno-Azizi et al., as shown above, or because of the new grounds of rejection.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Friday, between 10:00 am and 6:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Lynn Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AV



Anatoly Vortman  
Primary Examiner  
Art Unit 2835